US Army Corps of Engineers®
Engineer Research and Development Center

Geotechnical and Structures Laboratory

Description

The Geotechnical and Structures Laboratory (GSL) is one of seven laboratories that make up the US Army Engineer Research and Development Center (ERDC). GSL was formed in October 2000, by consolidation of the Geotechnical Laboratory, established in 1931, and the Structures Laboratory, formed in 1983 by combination of the Concrete Laboratory and the Weapons Effects Laboratory. The Concrete Laboratory had existed at WES since 1946, when it was transferred from Mt. Vernon, NY. Formation of GSL was undertaken to capitalize on research synergies that had been developing over the years involving the prediction of behavior of structures built in or with earth materials and the effects of weapons and explosives on earth materials or earth construction. The GSL mission has evolved over the years to meet the needs of the US Army, the Corps of Engineers and the nation.

Capabilities

GSL conducts research in soil and rock mechanics; earthquake engineering and geophysics; tunneling and trenchless technology; engineering geology and seismology; vehicle mobility and trafficability; unexploded ordnance detection; and pavement technology. It also researches the response of structures to weapons effects and other loadings, investigates methods for making concrete and other materials more durable and economical, studies the application of explosives technology to military and civil engineering, and investigates the behavior of earth/structure systems subjected to blast loading and projectile penetration.

GSL stands as a world leader in research on effects of earthquakes on embankment dams and the evaluation, maintenance and rehabilitation of mass concrete, steel and reinforced structures. It is the lead Department of Defense laboratory for Survivability and Protective Structures, Airfields and Pavements, and Sustainment Engineering research.

GSL operates a number of unique laboratory and research facilities, including the world's most powerful centrifuge dedicated to engineering and scientific research.

Point of Contact

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